

CLAIMS

What Is Claimed Is:

1. A fluid coupling assembly for retaining a sealed joint, comprising:
a first member adapted to be connected to a first fluid conduit and having a first sealing surface, a series of serrations and a first fastening configuration;
and
a second member adapted to be connected to a second fluid conduit, a second fastening configuration and enabling a second sealing surface to engage the first sealing surface,
the second member has a plurality of axially cantilevered beams, each beam having at least one tooth of a configuration to engage the series of serrations, an operative engagement of the tooth and serrations enables a relative low force rotation during a sealing engagement of the first sealing surface and the second sealing surface and a relatively higher force resistance to rotation during disengagement.
2. The fluid coupling assembly of Claim 1 wherein each cantilevered beam has a curvilinear cross section traverse to an axial direction.
3. The fluid coupling assembly of Claim 2 wherein the cantilevered beams are spaced in an annular pattern with a pair of teeth provided at an axially distal side end of each cantilevered beam.
4. The fluid coupling assembly of Claim 1 wherein the serrations are annularly arranged in a circular pattern about the first member and the axially cantilevered beams have inner and outer diameters that subscribe concentric circles and at least one tooth member on each cantilevered beam projects radially inward from each cantilevered beam inner diameter to engage the circular serrations in a ratcheting manner as the respective teeth undulate over the circular serrations during sealing engagement and disengagement modes of operation.

5. The fluid coupling assembly of Claim 4 wherein a pair of spaced teeth project radially inward from each cantilevered beam.

6. The fluid coupling assembly of Claim 4 wherein the circular serrations are formed by truncated teeth with annular axially tapered surfaces and transverse engagement surfaces of different angular dimensions.

7. The fluid coupling assembly of Claim 4 wherein the cantilevered beam teeth and the circular serrations have the angular dimensions for the engagement surfaces wherein an equal resistance force is provided for both coupling and decoupling.

8. The fluid coupling assembly of Claim 7 wherein 3 spaced teeth project radially inward from each cantilevered beam.

9. The fluid coupling assembly of Claim 1 wherein axial leading surfaces of the serration are chamfered.

10. The fluid coupling assembly of Claim 1 wherein the location of the tooth and the serrations are to align at their axially leading transverse surfaces when the first member and second member are operatively coupled.

11. A fluid coupling assembly for retaining a sealed joint, comprising:
a first member adapted to be connected to a first fluid conduit and having a first sealing surface, a series of serrations and a first fastening configuration;
and

a second member adapted to be connected to a second fluid conduit, a second fastening configuration and enabling a second sealing surface to engage the first sealing surface,

the second member has a plurality of axially cantilevered beams, each beam having a plurality of teeth of a configuration to engage the series of serrations, an operative engagement of the teeth and serrations enables a resistance force rotation

during a sealing engagement of the first sealing surface and the second sealing surface and a resistance force rotation during disengagement, the plurality of teeth and serrations remaining in contact with each other when a pre-determined sealing force is reached between the first member and the second member.

12. The fluid coupling assembly of Claim 11 wherein each cantilevered beam has a curvilinear cross section traverse to an axial direction.

13. The fluid coupling assembly of Claim 12 wherein the cantilevered beams are spaced in an annular pattern with a plurality of teeth provided at an axially distal side end of each cantilevered beam.

14. The fluid coupling assembly of Claim 13 wherein the serrations are annularly arranged in a circular pattern about the first member and the axially cantilevered beams have inner and outer diameters that subscribe concentric circles and each tooth member on each cantilevered beam projects radially inward from each cantilevered beam inner diameter to engage the circular serrations in a ratcheting manner as the respective teeth undulate over the circular serrations during sealing engagement and disengagement modes of operation.

15. The fluid coupling assembly of Claim 14 wherein the resistance force is the same during the sealing engagement and sealing disengagement.

16. A fluid coupling assembly for retaining a sealed joint, comprising:
a first member adapted to be connected to a first fluid conduit and having a first sealing surface, a series of axially aligned serrations and a first fastening configuration; and

a second member adapted to be connected to a second fluid conduit, a second fastening configuration and enabling a second sealing surface to engage the first sealing surface,

the second member includes a hollow cylindrical collar with spaced axial notches forming a plurality of axially cantilevered beams, wherein each

cantilevered beam has a curvilinear cross section traverse to an axial direction, each beam having a plurality of teeth of a configuration to engage the series of serrations, an operative engagement of the teeth and serrations enables a resistance force rotation during a sealing engagement of the first sealing surface and the second sealing surface and a resistance force rotation during disengagement, the plurality of teeth and serrations remaining in contact with each other when a pre-determined sealing force is reached between the first member and the second member.

17. The fluid coupling assembly of Claim 16 wherein one of the serrations and teeth have transverse engagement surfaces of different angular dimensions during a sealing engagement and disengagement to provide a lower force during engagement and a higher force during engagement.

18. The fluid coupling of Claim 16 wherein the axially aligned serrations are annularly arranged in a circular pattern about the first member and the axially cantilevered beams have inner and outer diameters that subscribe concentric circles and each tooth member on each cantilevered beam projects radially inward from each cantilevered beam inner diameter to engage the circular serrations in a ratcheting manner as the respective teeth undulate over the circular serrations during sealing engagement and disengagement modes of operation.